THE FARMERS' CABINET,

DEVOTED TO AGRICULTURE, HORTICULTURE AND RURAL ECONOMY.

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Rotation of Crops.

In our last we stated certain facts and principles, to serve as guides in this important branch of agriculture. From the principles there laid down and established by CHAPTAL, and others, we may draw the following conclusions:

1st. That however well prepared a soil may be, it cannot nourish a long succession of crops without becoming exhausted.

2d. Each harvest impoverishes the soil to a certain extent, depending upon the degrees of nourishment which it restores to the earth.

3d. The cultivation of spindle roots ought to succeed that of running and superficial roots.

4th. It is necessary to avoid returning too soon to the cultivation of the same, or analogous kinds of vegetables, in the same soil.*

5th. It is very unwise to allow two kinds of plants, which admit of the too ready growth of weeds among them, to be raised in succession.

6th. Those plants that derive their principal support from the soil should not be sown, excepting when the soil is sufficiently provided with manure.

7th. When the soil exhibits symptoms of exhaustion from successive harvests, the cultivation of those plants that restore most to the soil, must be resorted to.

These principles are confirmed by experience; they form the basis of a system of agriculture, rich in its products, but more rich in its economy, by the diminution of the usual quantity of labor and manure. All cultivators ought to be governed by them, but their application must be modified by the nature of soils and climates; and the particular wants of each locality.

To prescribe a series of successive and various harvests, without paying any regard to the difference of soils, would be to commit a great error, and to condemn the system of cropping in the eyes of those agriculturalists, who are too little enlightened to think of introducing into their grounds the requisite changes.

Clover and sainfoin are placed amongst the vegetables that ought to enter into the system of cropping, but these plants require a deep and not too compact a soil, in order that their roots may fix themselves firmly.

Flax, hemp, and corn require a good soil, and can be admitted as a crop only upon those lands that are fertile, and well prepared.

Light and dry soils cannot bear the same kind of crop as those that are compact and moist.

Each kind of soil, then, requires a particular system of crops, and each farmer ought to establish his own upon a perfect knowl-

* In addition to the reasons I have given why plants of the same or analogous kinds should not be cultivated in succession upon the same soil, there is another which I will here assign. M. Oliver, Member of the French Institute, has described with much care all the insects which devour the neck of the roots of grain; these multiply infinitely if the same or analogous kinds of plants be presented to the soil for several successive years; but perish for want of food whenever plants not suited to be food for their larvæ, are made to succeed the grains. These insects belong to the family of Tipulæ, or that of flies.—(Sixteenth Vol. of the Memoirs of the Royal and Central Agricultural Society of Paris.)

edge of the character and properties of the land he cultivates.

As in each locality the soil presents shades of difference, more or less marked, according to the exposure, composition, depth of the soil, &c., the proprietor ought so to vary his crops, as to give to each portion of the land the plants for which it is best adapted; and thus establish a particular rotation of crops upon the several divisions of his estate.

The wants of the neighborhood, the facility with which the products may be disposed of, and the comparative value of the various kinds of crops, should all be taken into the calculation of the farmer, in forming his plan of proceedings.

There is another point in regard to crops that ought to be well weighed by the farmer; though his lands may be suited to cultivation of a particular kind, his interests may not allow him to enter upon it. The more abundant any article is, the lower will be its price; he ought then to prefer those crops of which the sale is most secure. If a product cannot be consumed upon the spot, it is necessary to calculate the expense of transporting it to a place of of sale in countries where it is needed.

An intelligent farmer, whose lands lie at a distance from a market, will endeavor to avoid the expenses incident to the transportation of his products; and in order to do this he will give the preference to those harvests of fodder or of roots which may be consumed upon the place by his dependents and his animals.

There is another circumstance which must be attended to in sowing those lands which are light, or which lie upon a slope; for these it is necessary to employ such vegetables as cover the soil with their numerous leaves, and unite it in every direction by their roots, thus preserving it from being washed away by rains, and at the same time protecting it from being too much dried by the burning rays of the sun.

In order to support by example the truth of the principles which I have here laid down, I will make a statement of the series of crops that are found most advantageous in those countries where agriculture is the most flourishing. I shall commence with the provinces of ancient Flanders, because there the art of cultivating the soil to the greatest advantage had its birth.

In the departments of Lille and Douai, where the soil is of the best kind, and the art of preparing and employing manures is carried to the greatest perfection, the following series of crops are adopted.

First Series.	Flax or cabbage.
	Wheat.
	Beans.
	Oats, with trefoil.
	Trefoil.
	Wheat.
Second Series.	Turneps.
	Oats or Barley, with trefoil.
	Trefoil.
	Wheat.
Third Series.	Potatoes.
	Wheat.
	Roots,—turneps or beets.
	Wheat.
	Buckwheat.
	Beans.
	Oats and trefoil.
	Trefoil.
	Wheat.

In this rotation of crops we find that after the soil has been manured, the crops that are most exhausting are replaced by those that are less so; and those that foul the soil, by those that cleanse it by requiring frequent weedings.

It is by similar means that nearly the whole sea coast of Belgium, consisting of sterile sand, has been rendered as fertile as the best soil; and the richest harvests have followed from a judicious system of cropping.

Upon the sands in the neighborhood of Bruges, Ostend, Nieuport, Arvens, &c., the cultivation of the grains is made to alternate advantageously with that of beans, cabbage, potatoes, and carrots. The system of cropping practised in Norfolk, and so much praised by the English, consists in commencing the series by the cultivation of roots in a well manured soil; these are followed by oats or barley with trefoil, and afterwards by wheat.

In the bed of dry sand which forms the soil of Campine, the industrious inhabitants have with equal success vanquished all obstacles, and fertilized the soil. It is surprising to find in these plains of sand, excellent crops which, by their judicious arrangement, are constantly meliorating the soil. The series which is there followed is this:

Potatoes.
Oats and trefoil.
Trefoil.
Rye.
Turneps.

During a tour which I made with Napoleon in Belgium, I heard him express to one of the council of department, his surprise at the vast extent of waste land over which he had just travelled: he was answered thus; "Give us a canal to transport our manures, and to convey our produce, and in five years this sterile country will be covered with

crops." The canal was afterwards constructed, and the promise realized in less than the required time.

In the interior of France, where cattle subsist almost entirely upon fodder, and are not, as in the northern countries, fed upon the mash from breweries and distilleries, crops of the various plants used for their support should be most extensively cultivated, and should occur more frequently in the rotations.

In all the compact and slightly argillaceous soils upon my estates, if they are deep, after having had them well dressed with barn yard manure, I commence my series of crops with beets, to which succeeds wheat, which I sow immediately after having drawn the beets, and without any intermediate tilling; the wheat I replace by artificial grasses, and these by oats. When the land is of very good quality, I follow wheat by clover, and this in its turn is succeeded by the grains, and by roots.

In light soils which are deep and sandy but fresh, such as those upon the borders of the Loire, which are submerged once or twice every winter, I sow first, winter vetches, which produce abundantly, and these I replace by beets.

Lands of the best kind, that is to say, lands which to a good mixture and sufficient depth, unite a favorable exposure and suitable manures, may receive into their series of crops all the plants adapted to the climate, but there are not many soils possessing all these qualities.

In the siliceous, and calcareous soils, as they are generally dry, may be alternated crops of rye, barley, and white rye, with those of sainfoin, lupines, lentils, French beans, chick peas, radishes, woad, buckwheat, potatoes, &c.

Preference should always be given to those crops which experience has declared to be best suited to the soil and climate, as well as ao those of which the products are the most tdvantageous to the proprietor.

In compact lands, containing a portion of clay, and which from their quality are suitable for wheat, the successive crops may consist of wheat, oats, trefoil, clover, vetches, beans, turneps, radishes, cabbages, mustard, &c. A succession or rotation of crops should be established in these various soils, according to the principles which I have explained.

A succession of crops well conducted, economizes, labor, manure, expense of transportation, &c.: it furnishes the means of raising and fattening a greater number of animals, and it meliorates the soil to such a degree as entirely to change its nature; so that the most delicate plants, and those requiring the most nourishment, may be raised in a soil originally sterile and ungrateful. The arid sands of Belgium, and many of the alluvions on the borders of our great rivers, offer numerous examples of the truth of this. A good system of cropping alone can give security of a lasting prosperity in agriculture.

From the Genesee Farmer.

Brief Hints for Autumn Work.

Select seed wheat from that which grew in the most productive parts of the field—endeavor to obtain the largest seed, and sow none other—this, if practised in yearly succession, will greatly improve the variety.

Sow none but clean seed—for farmers may as well raise wheat as to raise weeds.

Chess may be separated from seed wheat by a good fanning mill. It may also by using brine—if the brine is too strong, so that good plump wheat will not sink in it, dilute it with water until it will; and the chess and light imperfect grains will float, and may be skimmed off. Then empty the wheat into a basket set on a tub or barrel, and the brine will run through into it for further use. Both these methods of clearing wheat may be combined to advantage.

Picking the largest heads by hand is a slow but very thorough way, and more particularly beneficial where crops are sown expressly for seed.

Smut in wheat crops is perpetuated by the dust of the smut adhering to the seed. It may be prevented by steeping the seed twenty-four hours in ley, or a mixture of fresh lime and water made of half a pound of the former to one gallon of the latter. This is certain prevention. Care should be taken that seed is not rendered foul by putting it in smutty bags, or those where smutty wheat has been kept.

The quantity of wheat sowed to the acre should be from five pecks to two bushels, varying with the time of sowing, and with the size of the grains of seed. Early sown wheat should be in less quantity than late; and wheat with small grains should be in less quantity than large, because there are more of them to a bushel.

Wheat sown about the time or after the first frost will escape in a great measure the Hessian fly. Where the fly is not destructive it should be sown early.

Furrow drains should be cut by passing the plough three or four times through the same furrow, and they should be made through all low parts of the field. They should be well cleared of loose earth by means of a shovel or hoe, so as to admit the surface water in wet seasons to pass freely off.

Corn should always be *cut up*, that is, cut off near the surface of the ground, and not

topped, or cut above the ears. The former is more expeditious, it saves twice as much fodder, and is attended with a better crop of corn, and it is always diminished considerably by topping, [See Cabinet, page 3.] This has been proved by repeated experiments where the crop was *measured*.

Seed corn should be always selected in autumn—take such for this purpose as have the greatest number of ears to a stalk.

Hogs to be fattened may be turned into apple orchards to pick up falling apples. They will fatten on them as well as on corn, if they have a plenty of them.

Grain fed to hogs should always, if possible, be first ground to meal.

Considerable advantage is derived from feeding *cooked* food (steamed or boiled) to hogs, and it should always be practised when the number is sufficient to warrant the erection of proper apparatus for it.

Cooked food for fattening cattle is of little advantage, and commonly not worth the trouble.

Advantage is generally derived from using *mixed* food for domestic animals.

Straw may always be of great use to the farmer in many ways, and is well worth preserving. The following method of securing it is given by a correspondent of the Genesee Farmer. "Previous to thrashing, I go to a hay-stack, and twist a quantity of bands, from six to ten feet long, which are placed at the barn door, and when the straw is raked to the door, two men take a band and stretch it over the bundle of straw, then run each a hand under it, and turn it over endwise, when one of them fastens the band, and the other prepares another band. In that manner two men will bind as fast as the swiftest machine will thrash, and the straw is stacked as securely as wheat, and in one fourth of the time required when not bound." When wanted it may be afterwards removed with far less labor than when stacked without binding.

Strawberries may be transplanted with advantage, in the early part of autumn.

Fruit trees may be removed and transplanted after the first of October. Most farmers who transplant fruit trees, suffer a great loss by not doing the work *well*. The principal care needed is, *first*, to dig the holes large, say six feet across, and fifteen or eighteen inches deep; *secondly*, to preserve, carefully, the roots as entire and uninjured as possible, and not to suffer them to become dry on the ground; and *thirdly*, to fill the hole with finely pulverized, rich earth, (not manure,) shaking it in, in small quantities, and packing it closely but gently about the roots, so as to leave them in their natural position in the soil. The whole expense of this, would not be more than half the price of the tree, and in five years it would be three times the size which it would be if transplanted by the common way of digging small holes and doing the work hastily and imperfectly.

Method of Harvesting Indian Corn.

If your hay is short, or you wish to sow winter grain after you Indian corn, or secure your corn against the effects of early frosts, you may cut up your corn-hills close to the ground, in fair weather, with a sharp knife or sickle, and lay two rows into one, in small bundles, as when you top and secure your stalks; bind your bundles above the ears, and stack the same day in small stacks, either upon the borders of your field, or upon an adjoining field; you may then plough and sow as upon fallow grounds; secure your stacks by doubling down the tops, and binding the heads with a pliable stalk; this will exclude the rains, which otherwise would damage your corn. This corn will be ripe at the usual time, without the least diminution in its color, weight or value; but in the opinion of some of the best farmers, (who are in the steady practice of this mode from choice) with an increased value to the grain. The increased quantity and value of your stalks will richly pay the expense; you may, in this way, bring forward the sowing of your winter grain, two, three, or four weeks, which will again at harvest repay the expense of clearing your corn-fields. If you house your corn-stacks before you husk your corn, the pitching will be heavy, and your bundles often break, and your places for housing be difficult and inconvenient, andof ten exposed to your cattle; therefore, husk your corn on the field, and empty your baskets into your cart as you husk, always remembering to leave the husk upon the stalk, by breaking off the cob; these will again repay your expense in feeding. The difference in the mode of husking, will at first be considerable; but a little practice will soon remove this, and render them equal. It is of high importance for every farmer to know every mode of culture, that will afford him successful advantage in managing his farm, and in this point of view, this does not rank as one of the least.

Dressing,

The application of dung, or other manures, to soils, to increase their fruitfulness. Dressing differs from manuring in general, only as it is chiefly intended for the increasing of one single crop. Not only are dressings necessary for poor and weak soils; but they are profitably applied to those which are rich

and strong, especially when seeds are sown which need much nourishment, or will make good return for it.

There are four things chiefly to be regarded in dressing; the suitableness of the dressing to the soil, and to the crop; and the manner and the seasons of applying it.

To light, warm, or sandy soils, the coldest manure should be applied; such as the dung of hogs, cows, oxen, &c. Dung that is much mixed with straw does best in such a soil, and the straw soon rots and become food for plants. Cold and stiff soils should be dressed with the hottest and driest manures, as the dung of horses, sheep and fowls. Wet soils should have manures that have the greatest power of absorbing moisture.—Lime, where it is cheap and plenty, may be used with great advantage; ashes, coals, and saw dust are also proper.

Some kinds of dressing should be well mixed with the soil, by the plough and harrow; especially such as are apt to lose their strength, by being exposed to the air. Of this sort are dungs in general, and some other manures. Dung is to be ploughed in with a light furrow. Composts, which consist of dung, earth and other substances, need only to be harrowed. If dressings are laid too deep, as under deep furrows, they will be in a manner lost; the roots of most kinds of annual plants will scarcely reach them; and, before the next ploughing, the strength of them will be sunk still deeper into the earth.

There are other manures which should be used only as top dressings. Their exposure to the air takes away little or none of their virtue, being of an alkaline nature, such as ashes, lime, and the like. They are speedily settled into the soil by rains and melting snows, and afford a more kindly nourishment to the roots of grass and grain, than if they were buried in the soil. Being laid lower than the surface, their strength would be more apt to be carried lower than the roots of plants commonly reach.

Some dressings are thought to be more successfully applied some time before sowing. Such a one lime is said to be, as being apt to burn, or too much heat the seed. But this, I think, can be only when it is laid on unslacked, and in large quantities.

Other dressings answer best at the time of sowing. This is the case as to most kinds of dung that are used, and the several other manures.

But those manures which exert all their strength suddenly, are allowed to be the best, used only as top dressings, after the plants are up, such as soot, ashes, certain warm composts, and malt dust. If they are laid on winter grain in autumn, there will be danger of their causing too rapid a growth: In consequence of which, the grain will be afterwards stinted, and languish, unless another and larger dressing be given it in the following spring, or summer. It is probably best to apply these dressings just before the time when the plants will need the greatest supply of vegetable nourishment, which is when their growth is most rapid, or near the time when the ears are shooting out.

How to treat a Farm in sandy soil.

My farm is situated on an extensive plain that was once covered pretty generally with small pine timber. The soil is sand, occasionally gravel, and more or less mixed with loam. It consists of two hundred acres, of which thirty acres are in wood, twenty in meadow, and ten acres of waste, leaving for cultivation about one hundred and forty acres of arable, or land used for the plough, which is divided into seven lots, of twenty acres each. One of these is planted in corn, on clover sod. The corn is large twelve rowed early yellow, and my usual produce is about fifty bushels per acre. My mode of cultivation is, that after the lot has lain out one year in clover, to plough it the last of April or first of May, about six inches deep: then furrow both ways with a light corn plough; the first times across the furrows about two feet nine inches apart, the next about three feet. I plant immediately after furrowing. As soon as the corn is up the length of the finger, I harrow it with a large heavy harrow lengthwise with the furrow, as the ground was originally ploughed, and take two rows at a time. Two men or boys follow the harrow with aprons, out of which they plaster the corn, and also raise any plants which may have been thrown down by the harrow passing over them. In a week after, I plough once between the rows as they are planted the narrowest way; the men follow with the hoe, and they will finish twenty acres in ten days. In about a fortnight more I plough it the widest way of planting, twice between the rows and throw the ground towards the plant. I cut the stalk above the ear as soon as the kernel in the ear is hard, and secure the stalks in shocks. We husk the corn on the hill, and two men will gather one hundred bushels of ears in a day. The lot which was in corn, I put down the succeeding year to oats, and it commonly produces about forty bushels per acre. This lot I seed down with western clover seed, eight quarts per acre. Two lots are in wheat which were likewise the year previous in clover seed. The one is ploughed the first of August, and again just previous to sowing in October; the other but once, the last of August or first of October,

about a fortnight previous to sowing. These lots have the benefit of my barn manure, which is scattered on such portions as I think require it most.

I commonly sow about one bushel twelve quarts per acre, and my common yield is twenty bushels of wheat per acre. Thus four lots are employed, one in corn, one in oats, two in wheat; the remaining three are in pasture. Two of these are again to be ploughed up in the fall, for wheat, and the remaining one is for corn the succeeding season. The experience of twenty years has confirmed me in the belief that this is the most successful mode of cultivation in our soil, and I have at all events been satisfied with the amount of produce my farm has yielded me.—*Farmer.*

On the Management of Cows.

By Russel Woodward.

Having formerly kept a large number of cows, I observed many among them that had dried up their milk so early in the fall, that they were not profitable, while others, with the same keeping, gave milk in plenty until late in the seasen. I likewise have often heard my neighbors observe, that some of their cows, though very good in the fore part of the season, dried up their milk so early, that they were unprofitable, and they should have to put them off; I accordingly thought it expedient to find out the cause, if possible; and when I brought to mind the way that some of my young cows had been kept and milked, I attributed the cause to the milking of them the first season they gave milk, and by many experiments since, I have found that young cows the first season they give milk, may be made, with careful milking and good keeping, to give milk almost any length of time required, say from the first of May to the first of February following, and will give milk late always after, with careful milking. But if they are left to dry up their milk early in the fall, they will be sure to dry up their milk each succeeding year, if they have a calf near the same season of the year, and nothing but extraordinary keeping will prevent it, and that but for a short time. I have had them dried up of their milk in August, and could not by any means make them give milk much past that time in any preceding year. I had two heifers, which had calves in April, and after getting them gentle, I set a boy to milk them for the season, (which is often done the first season, on account of their having small teats;) he was careless, and dried them both off in August. Although I felt satisfied I should lose the greater part of the profit on them afterwards, yet I took it upon me the following year to milk them myself, and give them good feed, but to no purpose. I could not make them give milk much past the time they dried the year before. I have two cows now that were milked the first year they had calves, until near the time of their calving again, and have continued to give milk as late ever since, if we milk them.

Fattening Hogs on Apples.

Mr. E. Holmes—In my communication of 1834, I described my mode of fattening swine upon apples. I will now state the result of my experiment. I last year fattened an old hog and two pigs upon apples, upon 14 bushels of oats and pea meal, and one bushel of Indian meal only. I began to feed them about the 10th of the 8th month, and they were in rather poor condition I fed the pigs about three months,and they weighed at seven months old, 113 and 125. The hog I fatted about four months, and when he was about 19 months old he weighed 415, and leaves weighed 34 lbs. 10 oz.

Paine Wingate.

Remarks.—Mr. Wignate is a practical farmer—is one of the society of Friends, and like most of that highly respectable class, an exact observer of things. According to some of his experiments, he concludes that the fattening of hogs in our section of the country, unless a person has slops, apples, and such cheap food to give them, is a money losing business—or in other words, keeping hogs upon corn and potatoes alone, will bring your pork to about ten cents per lb., whereas if you have an abundance of slops, and food of that kind, it will reduce the cost of pork to a much less sum, and make it much more profitable. Mr. W. brought us a piece of the hog mentioned above. It was of as good a flavor and of as solid a texture as any pork we ever saw. In the thickest part it measured five inches of clear fat. Communities are slow in changing their habits and opinions, and especially farmers. Many even now, notwithstanding the experiments which have been tried by acute and observing men, will not believe that apples were made for any thing but apple sauce and cider. And many very worthy men have resisted the march of the Temperance cause because they would have to sacrifice their orchards. And others in their zeal to do away the evils of excessive drinking, have actually cut down their trees. Now we say the more orchards, other things equal, the better. Apples are as valuable for stock, and even more so, as for men. Sheep like them. Cattle will fatten upon them, and pork can be made more expeditiously and economically by them; and we would therefore say to all farmers, if you have a good orchard, take care of it—if you

have a poor one, make it better—if you have none at all, set out one as soon as possible.

[*Maine Farmer.*

From the Memoirs of the Philadelphia Agricultural Society.

Notices for a Young Farmer.

Always rather understock your farm with domestic animals. An extra number of horses is the most oppressive. No farmer should be without a due proportion of working oxen. The neck yoke is the simplest; but is not deemed the best mode of enabling them to work. That fitted on the forehead, and attached to their horns or collars, and other appropriate gears, are, by many, preferred.

Have no more Swine than you can feed well; always rung, and kept within your own inclosures, if your farm be in a populous neighborhood. Running hogs are fertile sources of bitter enmities, and petty controversies. A rooting hog wastes its flesh, and requires more food to restore it than is gained by the scanty prey after which it labors. Nothing is better for store swine, than red clover eaten off the growing plant. But differently from horned cattle, green clover cut and given to them will not keep them in good plight. They waste as much as they eat, and do not relish it in this way.

In a well managed butter dairy, skimmed and butter-milk will afford means of raising a store-pig to each cow, besides a due allowance for some sows, to produce pigs for store hogs, and roasters for the market. Few farmers, however, do so much, because they will not raise esculent roots, as substitutes for grain, for winter keep of store hogs. A milk dairy furnishes food for sows and pigs, from the offal and unsaleable milk.

Let all your stock of animals be of the best breeds; but study useful qualities more than showy figures. Yet well proportioned and sightly animals are generally the most valuable, both as it regards usefulness and keep. There are exceptions, in dairy cows particularly. Large horses, cattle, sheep and swine, are not the most profitable. Those of the middle sizes are, on every account, to be preferred. Ostentation, (and as it respects the horse particularly, a less innocent motive,) more than real benefit, too often excites those who value themselves in exhibiting beautiful horses, very large and very fat, and of course very expensive, cattle, sheep and swine. This may be and is a laudable pride in those whose circumstances admit of indulging it: and breeding well formed and well endowed animals, is highly worthy of encouragement and merited praise. But hardihood and easiness of keep, should be prominent qualities, especially in the stock of a farmer. For such qualities, and many other good properties, the Tunis sheep will be found worthy of great attention.

The principle of adaptation of animals, as well as plants, to soil, climate and situation will be found in nature, with rare exceptions. The various species of sheep prove this principle. Dry countries are best, for all, as they require little drink, and wet soils produce diseases; yet fenny countries, and coarse bites, (especially if salt,) are favorable to some kinds. The Lincolnshire and long woolled, will thrive in such situations, and with such feed, where fine fleeced sheep would perish or degenerate. In our zeal for fine woolled sheep, we overlook this principle, and believe that any pastures would suit them.

The Chevoit sheep delight in mountainous ranges, often covered with snow; and the Shetland race in short bits, salt air, and barren browsing; yet the fleeces of the latter are finer, though scantier than those of the Merino. Instances of other animals might be adduced. Old pastures, dry and elevated, are better for sheep, and preferable to artificial grasses. Of such grasses, Mr. Coke, of Norforlk, in England, finds the cocksfoot, (our orchard grass,) constantly fed, the most eligible. He inoculates a clean fallow field with sods of old lay, three inches square, and the same distance apart, to renovate old pasture, so valuable is it deemed. His fields are well cleaned, by his row-culture, which he extensively and profitably practices. New countries produce no proper pastures, generally, for fine-fleeced sheep, though there may be selected spots. The sheep for such countries should be those of the heavy fleeced and long woolled breeds. Prairie countries, it would seem, are peculiarly calculated for them.

Household manufactures are of the first importance, and practical farmers should breed heavy fleeced and worsted, or long woolled sheep, for common purposes, in such manufactures, as well as for marketable carcasses, even in old settlements and districts of country. But for any flock, a better mode of providing for their keeping through the winter months, must be introduced. Succulent food, consisting of carrots, potatoes, Swedish or other turneps, Mangle Wurtzel, &c. must be provided. Sheep out of condition are most worthless stock. Wool or mutton can no more be produced from a starved flock, than can a profitable crop be gathered from a sterile and ill cultivated field. No question is intended to be discussed on the subjects of large manufacturing establishments, or fine woolled sheep. Enough, both of experience and discussion has already been exhibited, to enable every one to form his own opinion. Under prudent and

intelligent direction, both of these great subjects of public prosperity will settle down to their proper standard; and when that is exactly to be found, only time and experience, faithful and unerring monitors—can, with any precision, determine.

From the New-England Farmer.

Raising Chickens.

The following is a valuable article, and relates to a branch of rural economy, which deserves more attention than it has received in this country. Further favors of a similar nature from the same hand are respectfully solicited.

Mr. Fessenden.—In one of your late papers I saw mentioned a successful way of *raising chickens*,—I have been in the habit of raising them for some years, and if you think favorably of the mode I have adopted, you can insert it in your valuable paper.

I keep my hens warm under cover during the winter, and feed them on "Brewers' Grains," placed in an open box or tub, that they may eat when they please, occasionally giving them oats, corn, and oyster shells pounded fine, and plenty of water—by keeping them warm and well fed they begin laying earlier in the season. I prefer spring chickens, as they lay earlier than old hens—and the old hens to set, as they make the best mothers. I take care the eggs do not get chilled with cold, and keep them in a warm place in my house. When three or four hens want to set, I put from thirteen to fifteen eggs under each of them, according to size—the day of the month marked on each egg—and after the hen has set a week or ten days I examine them by holding the eggs to a crack or knot hole in a board when the sun shines through, and if I discover any rotten ones, I take them away and replace them with fresh ones, marked as before mentioned. When the chickens are all hatched, I put two or three of the broods to one hen, in a coop with an opening against an empty barrel placed on the bilge, and with a little care, when put in the coop, the hen may be made to brood them at the further end of the barrel. In that way the chickens that are not covered by the hen huddle together around her, and keep each other warm. The hens from which the chickens are taken I put into another coop, and in about a fortnight they begin to lay again. The hen being confined in the coop, will leave her chickens much earlier than if left to run at large with them, and the chickens will become so accustomed to going into the barrel and huddling together, as to be quite contented to give up the hen's brooding them. After the chickens are two or three weeks old I remove them with the coops into my garden, where they feed upon insects, so as to require but little food—but do not keep them there until they are large enough to injure the garden.

I feel persuaded that in the way I have proceeded, our market could be supplied with an abundance of poultry, and I recommend it with confidence, if managed with care and attention, as profitable to those who may engage in such business.

Charlestown, July, 1836.

Castor Oil Plant.

We would invite the attention of farmers to experiments on the culture of the castor oil plant—knowing our soil and climate to be adapted to its growth, and believing it may be made a profitable crop in field cultivation.

The plant to which we allude, and from which castor oil is extracted, is the Ricinis, a native of the East Indies and the north of Africa, a species of which has been acclimated in the West Indies and the United States. It is generally known in this country by the name of the "castor oil bean," and is cultivated in New-Jersey, Virginia, North Carolina, and most of the states on the right bank of the Ohio river. It is also extensively cultivated in Illinois, particularly in the counties of Edwards, Randolph and Madison. The manufacture of castor oil was commenced at Edwardsville, in the latter county, by John Adams, in 1825, in which season he made 500 gallons. His business has since increased, so that in 1831 he made about 12,500 gallons.

We have had no experience in the cultivation of this plant; but are informed there is nothing peculiar in its management, and that on good land, its product is very abundant. The beans are enclosed in capsules, divided into three cells, and contain a large quantity of oleaginous matter of a white color and sweetish taste. There are three methods of extracting the oil—by expression, decoction, and by the agency of Alcohol—the former of which is considered the best both on account of the quality of the oil, and the fact that a separation of the bean from the capsule is unnecessary.

The following is the process of extracting the oil adopted in Illinois, and the result is what is called "cold pressed castor oil," which is always considered the best quality. The beans are well cleaned and moderately heated in a furnace, care being taken that the heat be not raised higher than can be endured by the naked hand. They are then placed in an iron cylinder, and a follower is forced upon them by an iron or wooden screw, of great power. The screw is turned by a horse attached to a long and large lever, precisely in the same manner that a nut mill is operated. The usual quantity of oil thus

pressed out of a bushel, is about seven quarts. Not knowing the number of bushels that may ordinarily be expected from an acre, we cannot make an estimate of the product and profit of land devoted to the cultivation of this plant. We learn, however, from the Cincinnati prices current, that the beans are selling from $1,50 to $2,50 a bushel, and castor oil is quoted in the New-York prices current from $1,75 to $2,00 a gallon. The duty on imported castor oil is 40 cents a gallon, and the quality of American cold pressed is esteemed preferable to foreign, and it invariably commands a higher price in market. Experiments on the cultivation of this valuable plant may be easily and cheaply made, and we have no doubt it would be found to be one of our most profitable crops.

From the American.

A Preventive of the Wheat Fly.

MESSRS. EDITORS—Some time since in a communication published in the Baltimore papers, I stated my views on the destruction of wheat by the Hessian fly, and offered a remedy against its ravages. As this season will be remarkable for the devastation committed by this insect, and as the time is approaching for seeding for the next crop, I request a small space in your columns to bring before our farmers again the remedy then proposed, fully believing that if followed much good will result from it.

On observation it has been found that the insect producing the fly progresses with the growth of the wheat; and if the wheat is early sown, and the season is favorable to a luxuriant vegetation, the fly will be very perceptible in the autumn. The progress of the insect, as is observed in a former communication, is from the seed and upwards, and as many as six or ten have been observable on one stem between the root and surface of the earth. The question then arises, how is this insect generated, and what means should be used to destroy it? It is either generated in the grain of wheat similar to the bug which infests the pea, or the *insect when in its winged state deposites* an egg on the surface of the grain when in the ear and *thus when the wheat is sown and begins to vegetate* the egg vivifies *and the destructive worm is formed.*

For the following reasons I am strongly inclined to the latter opinion. It is known that this insect releases itself by bursting the blade that covers it, when the head is forming, and assumes *its winged state*, and there is to my mind no doubt that this *deposits its egg on the wheat* when filling and coming to perfection. If I had any doubts on this subject they would be removed by the fact that with the aid of a microscope the egg is discernable in the form of a glutinous matter. If this opinion be correct, the remedy is simple, and worthy at least of a fair trial. Providence inflicts no evil upon mankind without also providing some remedy, and unless this is intended as a special curse upon the husbandman there is and must be a remedy which he must find out by actual experiment.

In the course of twenty years experience in this matter, I have known but one experiment made to destroy this fly, and that proved successful. An intelligent farmer in Loudoun county, Va., having understood that some of his neighbors with the aid of a microscope, had discovered a glutinous matter on the surface of the wheat which they believed to be the egg of the fly, determined to try an experiment for its destruction, and succeeded in that crop; but unfortunately it was not followed up, and whether it will be an effectual remedy in all seasons, remains yet to be tested. The plan which he followed, and which it is the object of this communication to recommend to the notice of the farmers, is simply to pass the seed wheat through a strong brine or pickle, washing it well, and then rolling it in slackened lime, (similar to rolling it in Plaster of Paris,) not preparing at one time more than a day's sowing. Washing the wheat in brine, and rolling it in the lime are done primarily for the purpose of destroying the egg, but it answers another good purpose, that of preventing the growth of smut. The lime will also be found to act as a powerful stimulant to the growth of the wheat, and superior to that of plaster.

This remedy being so simple, and as I firmly believe so efficacious, I hope there will be many farmers disposed to make trial of it, and thereby fully test its correctness.

If I should be instrumental in arresting the progress of this direful enemy of the farmer, I shall be amply compensated in the recollection that I have discharged my duty to the community.

AN AGRICULTURIST OF MARYLAND.

The Weevil.

Salt is said to be a complete preventive against the destruction of wheat by weevil. Mix a pint of salt with a barrel of wheat, or put the grain in old salt barrels, and the weevil will not attack it. In stacking wheat, four or five quarts of salt to every hundred sheaves, sprinkled among them, will entirely secure them from the depredations of this insect, and render the straw more valuable as food for cattle.—*Hor. Register.*

For the Farmers' Cabinet.

MR. EDITOR,—I herewith send you extracts of a correspondence between JOHN LOFLAND, ESQ. favorably known as the Milford Bard, and Mr. A. WEBSTER, a distinguished horticulturist, both of the state of Delaware. The subject is one that, at the present time, excites considerable attention throughout the country, and as the questions propounded and the answers given will, no doubt, interest the great mass of your readers, you are requested to give them a place in the Cabinet.

—

The Morus Multicaulis.

MILFORD, DEL., *Aug.* 11, 1836.

MY DEAR SIR,—In the very first place, I return you my sincere thanks for the beautiful present you made me of the Morus Multicaulis. During the first five or six days, it did not grow in any preceptible degree; I nursed it with great care, and fed it well with soap suds, manure juice, and a small portion of plaster, when it suddenly took a start and has grown with great rapidity ever since. A new leaf, the size of a quarter of a dollar, has put forth, and another smaller one as large as a fip has made its appearance. Upon the whole, it lives, and bids fair to be a beautiful tree.

The *cuttings* I took out of the box a week after I had received them. They were all rotten but two; one of *them* has budded and put forth roots in a considerable degree; but the *other*, though somewhat greenish, shows no signs of vegetation. The other three were rotten, the bark having fallen off in a slimy state.

My object, my dear friend, in writing to you at this time is, to ask some information on practical subjects: you have had practice in the propagation of trees which I never had. You will do me a great favor and gratify my curiosity, by answering the following questions:

From what part of the tree do you get cuttings?

How old ought the tree to be when such cuttings are taken?

Do you cut the whole tree up into cuttings?

Suppose I have five or six small trees of Morus Multicaulis next spring, and wished to propagate many, could I get cuttings from them, or should I be under the necessity of making layers of them?

Were the cuttings which you sent me taken from the six trees your father sent you, or how were they obtained?

Do you make cuttings and plant them any time during the spring and summer?

How late in the season may they be cut and planted?

How long, generally, are they in coming through the ground?

Is it necessary to have leaves on the cuttings when planted?

Can the leaves alone be calculated on as a means of propagation? I mean a single leaf buried in the ground.

Is this year's growth, or last year's growth, best for cuttings?

Can cuttings be taken from a tree during the fall and kept till the spring?

If so, how are they kept?

How do you obtain cuttings from the east? and what do they cost per hundred or thousand?

Does one cutting with two buds never produce but one tree?

At what age of the Morus Multicaulis do the stalks spring up around it?

Were the cuttings you sent me cut in the spring, or since?

Is it now too late to obtain a parcel of cuttings and plant them?

If it is not, who will sell me some?

In a word, how shall I proceed now or next spring, to multiply the Morus Multicaulis in the fastest possible manner from a given number?

I have reason to know, my dear friend, that you are acquainted practically with the above processes, and from your liberal disposition, I believe that you are willing to communicate to an ardent fellow-student, a part of your practical knowledge. Your compliance in answering the above questions, will greatly oblige your friend, who ever holds himself ready to reciprocate.

You spoke, in your last letter, of going to the Valley of the Mississippi. I should suppose that if you were to establish a large nursery there, you might, in a very few years, realise a fortune and well-earned fame. You are every way qualified for such an undertaking; and there in the finest country in the world, you might have a pattern farm, and make yourself and all around you what you pleased.

Believe me, I am, with the highest respect and esteem,

Your sincere friend,

JOHN LOFLAND.

—

CAMDEN, DEL., *Aug.* 22, 1836.

Respected friend John Lofland,

SIR,—Yours of the 11th inst. was duly received. Pardon my delay; a multiplicity of engagements has hitherto prevented my replying. Am pleased to learn that the Morus Multicaulis flourishes, and bids fair to sur-

vive its *unseasonable transplanting*. The one sent you was reared from a *cutting* planted last April, one of the parcels received from Boston at the same time with those put in the box. I have some three times as large as the one forwarded, all of this year's growth. In looking over my Mulberrys, I saw the cuttings forwarded had some appearance of life; therefore, I sent them to you to experiment on, as well as that you might see what constituted a cutting, in case you should ever want to take any from your plant.

In reply to your questions,

1st. Take the cuttings from any part of the tree which is of the previous year's growth, being careful to have two buds to every cutting. They should be cut very neatly, without breaking or bruising the bark, and the ends of the cutting immediately covered with *grafter's*, or other cement.

2d. Age of the tree not essential, from one to a thousand years back. The more thrifty the tree the better.

3. The *whole* of the previous year's growth may be used as cuttings.

4th. If you have five or six trees, I should make cuttings of three, layers of two, and *let one grow to* a tree for the purpose of procuring fruit and *seeds*.

5th. The cuttings I sent were received from Boston at the same time with the trees, of which I spoke, as well as the one sent you, which came in the same package. I would recommend that the one I sent you be permitted to grow another year before you use it for cuttings, then use only the branches.

6th. Cuttings should be taken after the sap has descended and the leaves fallen, and before it begins to flow in the spring, and be preserved in sand or a moist cellar until warm weather, when other trees begin to put out leaves—then plant in a rich, moist or wet soil, (if dry they must be liberally supplied with water,) leaving about one quarter of the length of the cutting above the ground, in an upright position, the earth being packed tight around them to retain the moisture; it is by no means a bad plan to cover the earth with chaff, as it helps to retain the moisture.

7th. They generally come through the ground in three or four weeks, sometimes sooner or later, owing to the weather; warm rains bring them on very fast.

8th. Leaves are not necessary, but on the contrary, would be injurious.

9th. I have never known any experiments tried with leaves, but should not think them likely to grow.

10th. This year's growth is best cuttings to be planted next spring.

11th. Cuttings may be taken from the tree in the fall and kept until spring by packing in sand, moss, or chaff *wet* in the same manner that grafts of pears or apples are kept.

12th. My cuttings were packed in damp *moss*, enclosed in a box, shipped from Boston to Philadelphia, and there reshipped for Camden, cost $60 per one thousand in Boston; box and freight, &c., extra.

13th. I have very seldom known a cutting with two buds to produce more than one tree, as the bottom bud forms a *root* and the top one the *branch*.

14th. There is no particular age when the branches become numerous. I have cuttings of this season's growth of three or four feet and two to five branches, the six trees or roots which my father sent were about the size of the one I sent you; I planted them the past spring, each having only one branch; they now have five or seven each, and will yield me at least twenty cuttings per tree.

15th. The cuttings I sent you were prepared last December, and had been planted in my garden, but failing to grow I pulled them up and sent them to you. Cuttings are very liable to die unless good care is taken to keep them moist, the bud or cut worm destroyed many for me last spring.

16th. It is now too late for you to procure cuttings before next winter. Very probably the cuttings may be obtained at the proper season of D. and C. Landreth, No. 63 Chesnut street, Philadelphia;* positively from William Prince and Son, at Flushing, Long Island, (near New York city,) or of George C. Barrett, No. 51 North Market street, Boston.

I would recommend that you try with one thousand cuttings next spring; the cost is not great and you can obtain them by the hand of some friend visiting the city; they could be brought in a common travelling trunk without inconvenience. From that number you may stalk the whole peninsula.

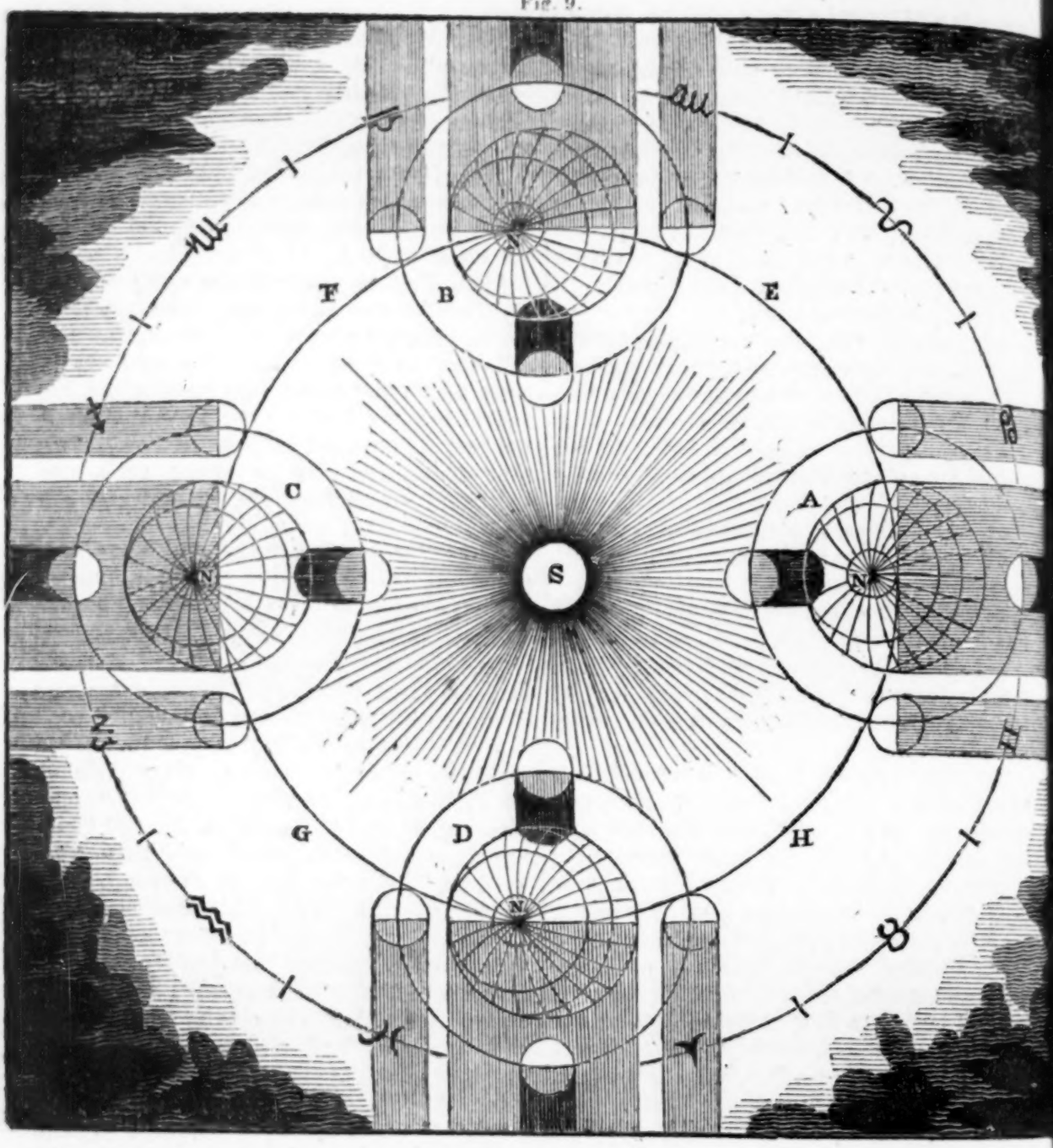
With sincere respect, I remain your affectionate friend and obedient servant, &c.

A. WEBSTER.

Cultivation of a new variety of Potato, and destruction of the Red Spider on Peach Trees.—At a late meeting of the London Horticultural Society, the President, Mr. Knight, described the culture of a new variety of potato, whereby 1000 bushels (each bushel 60 pounds) may be obtained as the average produce of an acre. He also stated that he had found a minute quantity of the flour of sulphur very efficacious in destroying the red spider on peach and nectarine trees and on melon vines.

[* The Messrs. Landreths do not furnish *cuttings*. They supply orders, however, for the trees, from eighteen inches and upwards.]

Fig. 9.



VIEW OF THE EARTH IN HER ORBIT ROUND THE SUN.

(Showing the several relative positions by which the seasons are produced.—The moon is also represented in her orbit round the earth.)

More distant still our *Earth* comes rolling on,
And forms a wider circle round the *Sun*;
With her the Moon, companion ever dear!
Her course attending through the shining year.
BAKER.

THE next planet to *Venus* in the order of the System, is the EARTH on which we live; which may be considered of second rate importance, being much inferior in magnitude to Jupiter, Saturn, and Uranus, but superior to Mercury, Venus, Mars, and the four new planets. But small as the *Earth* is when compared to some of the other planets, it is to us of the highest importance: we wish only to attain knowledge of others, that we may find out their relation to this, and thence learn our connexion with the universe at large. In the earliest ages of the world, mankind knew nothing as to its form and shape; and even in the present enlightened age, it is not unusual to meet with persons whose ideas in this respect are far from the truth. Those who have not been in the habit of considering this subject in an astronomical point of view, have still a very confused notion of the shape of the Earth, and also as to its position in the heavens.

The *Earth*, like the other planets, is not a

perfect sphere, its equatorial* diameter exceeding in length its axis by more than thirty miles; the former being 7964 miles, and the latter about 7930; her distance from the *Sun* is 95,173,000 miles; and she traverses the whole of her orbit in 365 days, 6 hours, 9 minutes, which constitutes her year.

The *axis* of the Earth is not perpendicular to the plane of the *Ecliptic*,† but inclined to it at an angle of 32° 28; round this axis she revolves in 23 hours, 56 minutes, 4 seconds, which is the length of the astronomical day.

The inclination of the Earth's axis is the principal cause of the variety or change of seasons; for as the axis of the *Earth* always preserves its parallelism, in her revolution round the *Sun*, at one part of her orbit she receives most of the light and heat on her northern hemisphere, and at another part on her southern, according as her north or south pole is turned towards the sun; while in two points of her orbit, both hemispheres are equally enlightened. The accompanging diagram will best explain the cause of the change of seasons, and of the lengths of the days and nights.

Let A, B, C, D, represent the Earth in four different parts of her orbit, equi-distant from one another;—N for *axis* and the *north pole*, and S the *sun*, nearly in the centre of the *Earth's* orbit. As the Earth goes round the sun, according to the order of the letters A, B, C, D, her axis N keeps the same obliquity, and is exactly parallel in every part of her orbit.

When the *Earth* is at A, its north pole inclines towards the sun, and brings all the northern places more into the light than at any other time of the year. But when the Earth is at C, in the opposite time of the year, the north pole declines from the sun, which occasions the northern places to be more dark than in the light, and the reverse at the southern places.

When the *Earth* is either at B or D, she inclines not either *to* or *from* the sun, but lies sideways to him, and then the poles are in the boundary of light and darkness; and the sun being directly over the equator, makes equal day and night at all places.

When the Earth is at E, it is half way between the *summer solstice*‡ *and autumnal equinox;* and when it is at F, it is half way between the *autumnal equinox* andthe *winter solstice;* at G, half way from the winter solstice to the spring equinox; and at H, half way from the spring equinox to the summer solstice.

From this it is evident, that when the Earth is at A, the *north pole* is enlightened, and the *southern* in darkness, and that exactly the reverse is the case when the *Earth* arrives at C, for then the *south pole* is enlightened and the *north* in darkness; in the former case, the northern hemisphere has *summer* and the longest day, while the south has *winter* and the shortest day; in the latter every thing is completely reversed.

That the Earth is of a globular form, may be inferred from analogy; as all the other heavenly bodies which are visible to us are globes, there is little reason to doubt that the earth is so likewise. Of this, however, there are demonstrative proofs.

The motion of the Earth in her orbit round the sun is called her *annual motion*, and that round her axis, her *diurnal motion*, which, at the *equator*, is about 1042 miles an hour.

These two motions, although constantly carried on together, are not sensible to us because they are so equable, interrupted by no impediments, and because every thing on the Earth's surface, and the atmosphere itself, partake of these motions.

The Earth is surrounded by a compound fluid substance called the *atmosphere*, which consists of air mingled with *aqueous vapours** and other exhalations from her surface. This atmosphere has a *refractive*† power, by which the rays of the sun are bent out of a straight line, and occasion a degree of light after that luminary is below the horizon. This faint light is denominated *twilight*.

It has already been observed, that the *Orbit* of the Earth is not a perfect circle, but inclined to the *Elipse*, and that the Sun is not exactly in its centre. This occasions the Earth to be seven days longer in passing through one half of her orbit than she is in traversing the other. The *Orbit* of the Earth is placed between those of *Venus* and *Mars*.

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* Equatorial, belonging to the equator, an imaginary line which divides the world into two equal parts, called the Northern and Southern Hemispheres. When the sun comes to this circle, the days and nights are equal all round the globe.

† The Ecliptic is a greater circle of the sphere, in which the Sun always appears to move; so called because *Eclipses* generally happen when the Moon is in or near this circle. It is divided into twelve equal parts, which are called *signs*; each of which takes its name from that constellation which, at the time the names were given, was situated near the portion of the Ecliptic it denominates.

‡ Is that time when the sun is at the greatest distance from the equator, and is thus called because he then appears to stand still, and not to change his distance from the equator for some time, which appearance is owing to the obliquity of our sphere, and which those living under the equator are strangers to. Solstice is from the Latin words *sol*, sun, *sto*, to stand.

* *Aqueous vapours*, watery particles. (Aqueous, watery;—vapour, a particle.—Vapour, a steam, a fume; —a vain imagination.)

† *Refractive*—having the power of *refraction*. Refraction is the deviation of a moving body from its direct course, occasioned by the different density of the medium it moves in; or, it is a change of direction occasioned by a body's falling obliquely out of one medium into another of a different density.

Horticulture and Botany.

See various trees their various fruits produce,
Some for delightful taste, and some for use;
See, sprouting plants enrich the plain and wood,
For physic some, and some design'd for food;
See, fragrant flowers, with different colors dy'd
On smiling meads unfold their gaudy pride.
Blackmore.

On the Study of Botany.

Botany is that branch of natural history which treats of the vegetable kingdom. The study of this science is not a trifling employment, undeserving the time and attention bestowed upon it. Can we for a moment conceive that the works of God are unworthy the attention of man?—that those productions which bear such evident marks of the wisdom and power of the Creator, are too contemptible for the examination of his creatures? Whoever has had the curiosity to crop the humblest flower of the field, and to observe the wonderful conformation of its parts, combining the united purposes of elegance and utility, will not hastily despise the study of nature. But when these observations are extended through the immense variety of productions which compose the vegetable kingdom; when the different offices of each particular part of the plant, every one essentially contributing towards its existence and propagation, are considered; when we advert to the variety of modes by which these ends are effected, and the infinite contrivance which is exhibited in their accomplishment, a wide field for instruction and admiration is opened before us.

We need not labor to prove how delightful and instructive it is to

"Look through nature up to nature's God;"

neither, surely, need we attempt to show, that if any judicious or improved use is to be made of the natural bodies around us, it must be expected from those who discriminate their kinds, and study their properties. Of the benefits of natural science in the improvement of many arts, no one doubts. Our food, our medicine, our luxuries are improved by it. By the inquiries of the curious, new acquisitions are made in remote countries, and our resources of various kinds are augmented. We find that gardening, the most elegant, and agriculture, the most useful of all arts, are improved only in those countries in which botany is made subservient to their advancement. And when a knowledge of this science is more generally diffused throughout our own country, we may expect to see it more frequently enriched with fields and adorned with gardens, which, while they bestow honor on their possessors, shall prove a pleasant recreation to the old, and a useful study to the young. Nor should its influence on the moral character be disregarded. The late President Dwight was an eminent champion of the virtue which he practised. He often directed the attention of his pupils to Sweden, to point out the influence of natural history on the moral character of man. In that country botany is taught in the schools, and the habitation of her excellent children presents a cheering picture of domestic felicity. Their piety and their patriotism both flow from the same source; for while they examine the productions of their country, they became attached to its soil, and while they contemplate the works of their Maker, they are animated with the glowing spirit of devotion.

Botany deserves our highest regards as the source of mental improvement. Nothing so powerfully attracts the notice of the young observer, as the gay, though fleeting beauty of flowers; yet these interesting objects serve to produce an accuracy of discrimination, which is the foundation of correct taste and sound judgment. To those whose minds and understandings are already formed, this study may be recommended, independently of all other considerations, as a rich source of innocent pleasure. Some people are ever inquiring what is the use of any particular plant? They consider a botanist with respect, only as he may be able to teach them some profitable improvement, by which they may quickly grow rich, and be then perhaps no longer of any use to mankind or to themselves. They would permit their children to study botany, only because it might possibly lead to professorships or other lucrative preferment. These views are not blameable, but they are not the sole end of human existence. Is it not desirable to call the soul from the feverish agitation of worldly pursuits, to the contemplation of divine wisdom in the beautiful economy of nature? Is it not desirable to walk with God in the garden of creation, and hold converse with his providence? If such elevated feelings do not lead to the study of nature, it cannot be far pursued without rewarding the student by exciting them. The more we study the works of the Creator, the more wisdom, beauty, and harmony become manifest: and while we admire, it is impossible not to adore.

"Soft roll your incense, herbs and fruits, and flowers,
In mingled clouds, to *Him*, whose sun exalts,
Whose breath perfumes you, and whose pencil paints."

Large Flowering Sensitive Plant.

There are many varieties of the *Mimosa* or sensitive plant. Some of them are large trees, and others rise only a few inches from the ground, or rather creep along it, spread-

ing in such a manner as to cover a very large surface. The *Mimosa grandiflora*, or large

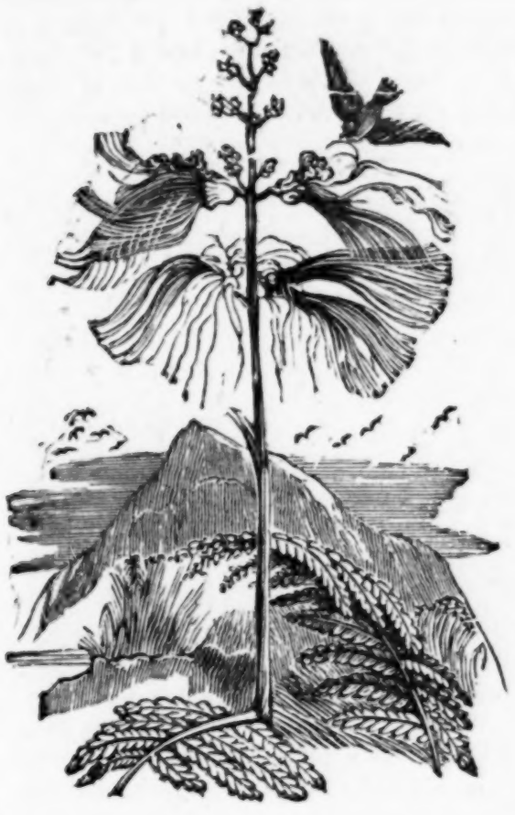

Fig. 10.—Sensitive Plant.

flowering sensitive plant, is represented in the above cut. It has an exceedingly elegant appearance, when the long and slender filaments which compose the flower have attained their full growth; and the effect is heightened by the splendor of a tropical sun, and the occasional accompaniment of those brilliant little humming birds which abound in the same latitudes.

The word *Mimosa* signifies "Mimic," and is given to the plant on account of the sensibility of the leaves, which, by their motion, mimic or imitate that of animals. In one species this property is very remarkable, though it belongs in a greater or less degree to all. By running a stick over a bed of the *Mimosa viva*, the leaves will contract themselves in such a way as to exhibit any figure which may be described by it, such as the name of the person who performs the experiment, or any other device he may please to execute: and this effect will continue for several minutes after the cause of it is removed. It is from the *Mimosa Nilotica*, or true Egyptian Acacia, that the gum Arabic is procured; and the common Acacia of our garden exhibits something of the retractile habits of these plants. If a bough be gathered, the leaves will immediately collapse or fall together, bending downwards towards the back of the stalk, along both sides of which they are so gracefully arranged.

BRITISH CATTLE.

CATTLE, THEIR BREEDS, MANAGEMENT, AND DISEASES, WITH AN APPENDIX—*Philadelphia, Grigg and Elliott*, 1836.

THIS work is one of the volumes of the Farmers' Series of the Library of Useful Knowledge, published in London under the superintendence of the Society for the Diffusion of Useful Knowledge, and re-published in this city by Messrs. GRIGG and ELLIOTT, No. 9 North Fourth street. It is a neat octavo volume of six hundred pages, illustrated by a variety of well executed wood cuts. In giving this work, the publishers have not only consulted their own interests, but also, and especially, the interests of the farming community. When we say that it ought to be in the possession of every farmer and grazier, we only bespeak for it a patronage commensurate with its real merits.

The reader will bear in mind, however, that this work treats almost exclusively of British Cattle, and the diseases to which they are liable—the best methods of treatment, &c. It would, therefore, have added not a little to its value, if the publisher had submitted it to the revision of a judicious and competent grazier, in order to have it more particularly adapted to this country. In that event, a brief history of the cattle of the United States could have been furnished; the best methods adapted to their management, the treatment of diseases, &c. This, we hope, will be attended to in a second edition, which, we trust, will be speedily demanded.

It was our intention to have given an extract from the work, with one or two of the illustrations; we made application for the necessary cuts, with an offer of payment for the use of the same, but could not obtain them. We shall, therefore, omit the extracts and a full review of this admirable work, until we come to treat upon the subject of CATTLE HUSBANDRY, which will be accompanied by the necessary illustrations.

Mules.—It is surprising that the farmers of this neighborhood do not turn more of their attention to the raising of mules, for the use of their farms. They are very scarce hereabouts, and we cannot account for it in any other way, than that their value is not properly appreciated. They are more profitable stock to raise than horses; they will live on straw, and stubble, and browse, and always command a handsome price; they are not liable to the train of diseases which visit horseflesh. They also live as long.—*Salem, N. C. paper.*

NOTICE.—By reference to the Cabinet of July 1, our subscribers will find that the second number was to be issued on or before the first of August—the number for the fifteenth of July was, therefore, omitted, and that issued on the first of August stands as the second number, and is paged accordingly. The work is semi-monthly—twenty-four numbers forming a volume. The subscribers will receive their whole compliment of twenty-four numbers in the course of the year; as the odd number will be worked in towards the close of the volume.

MORUS MULTICAULIS.—The mulberry, it is now well ascertained, is a byb'rid variety, and not a true species—the seed will not produce its like. We have been informed by a gentleman who purchased a plant, three or four years since, of some nursery-men of our vicinity, that with considerable care he raised quite a number of seeds. The plant was taken up upon the appearance of severe weather, and placed in a cellar where the frost did not penetrate—the roots were slightly covered with earth. Pursuing this course two succeeding winters, it attained the size of a large shrub with numerous ramifying branches—the third season it produced seeds. No other species or variety grew in the vicinity of the plant, and the blossoms consequently could not have been fertilized but by its own pollen. These seeds sown, and the result was a number of seedling plants, with foliage of all sizes and textures, from the common white to that of the parent.

Autumnal Hymn of the Husbandman.

Now we rest from our toils, Lord, our labors are done,
Our meadows are bar'd to the kiss of the sun;
We have winnow'd the wheat,—well our toil it repays,
And our oxen have eaten the husks of the maize.

We gathered our harvests; with strength in each limb
Toiled the mower, the ripe grass bow'd prostrate to him;
And the reaper, as nimbly he fell'd the proud grain,
Was blither than those who wear sceptres and reign.

And the wheat blade was tall, and the full golden ear,
Proclaim'd that the months of rejoicing were near;
The grape in rich clusters hung, promising mirth,
And the bows of the apple tree slept on the earth.

Did we thank thee then, God of the seasons? Oh no!
We were prompt in accepting thy favours, but slow
Were our lips, to give thanks for the rich gifts thy hand
Shower'd thick on the maize litter'd vales of our land.

Thou host rain'd on us manna, Lord,—yet we are mute,
Though all Summer's smiles of thy love are the fruit,
Springs and autumns, as fair as the Orient boasts,
Dawn on us;—yet faint are our tongues, Lord of Hosts.

Now we raise our glad voices, in gratitude raise,
And we waft on the beams of the morning our praise,
We thank thee for golden grain, gathered in shock,
And the milk of the kine, and the fleece of the flock.

And we thank thee for limbs moving light to the task;
For hearts beating high though unwarm'd of the flask;
Fill us, Lord, with just sense of thy bounty, and give
Health to us, and to all in the land where we live.

The Baltimore Farmer states that Mr. George Beltzover, of Baltimore, has a calf only three months old, which weighs 337 lbs. This was produced between a half Durham and Devon bull, and a 7-8 Durham cow. The weight of the mother of this fine animal on the hoof was 1300 pounds.

Keep Accounts.—The farmer ought not only to keep accounts with himself, so as to be able to review at the end of every year, his receipts and expenditures—to tell whence his cash comes, and whither it goes; but with his several fields, his crops, his sheep, cattle, horses, swine, poultry. He should at least do this with great particularity till he shall be master of the subject, and can trust his judgment with some confidence. For want of accurate accounts, farmers are often deceived, raise unprofitable crops and animals, or pursue unprofitable methods of cultivation or feeding. Sometimes, too, they abandon a pursuit really advantageous to them, under the false notion that they can do better some other way. We have published several specimens of such accounts. A little practice will make the business easy; and it will give you not only the satisfaction of knowing the pecuniary results of this and that crop or method, but will awaken new interests in the whole process by which land is prepared and a crop is matured. It will enable you to determine the value of the hints that you get from reading, and whether it really *is* more profit to cultivate five acres thoroughly and skilfully than ten at hap-hazard. And now while preparing your fields and sowing your seeds, is a good time to begin.

The true enconomy of housekeeping is simply the art of gathering up all the fragments, so that nothing be lost. I mean fragments of time as well as matters. Nothing should be thrown away as long as it is possible to make any use of it, however trifling it may be; and whatever be the size of a family, every member should be employed either in earning or saving money.

SHEEP are found to be less liable to disease when kept on dry upland pastures, than when allowed to feed on wet marshy ground. Worms in the nostrils of sheep, may be prevented by applying tar about their noses several times during the summer, which prevents the fly from depositing its eggs.—Sheep, as well as cattle and horses, should at all times have access to water, and have a daily supply of salt.